

REMARKS

The Office Action mailed July 29, 2005, has been received and reviewed.

Claims 1-50 are currently pending and under consideration in the above-referenced application. Claims 1-14 and 43-50 are withdrawn from consideration as being drawn to a non-elected invention, and have been canceled. Each of claims 15-42 stands rejected. Each of claims 15-42 has been amended to delete all occurrences of “said” preceding present participles, and to replace all other occurrences of “said” with “the.” These amendments are not intended to affect the scope of the claims in any way. Furthermore, independent claims 15 and 26 have been substantively amended.

Reconsideration of the above-referenced application is respectfully requested.

Drawings

Revised FIGS. 1A and 1B are submitted herewith to correct an error therein. In particular, FIGS. 1A and 1B have been revised to include the designation “PRIOR ART.”

It is respectfully submitted that these corrections to FIGS. 1A and 1B do not introduce new matter into the above-referenced application.

Approval of the corrections to FIGS. 1A and 1B, as well as entry thereof, is respectfully requested.

Rejections Under 35 U.S.C. § 103(a)

Claims 15-42 stand rejected under 35 U.S.C. § 103(a).

The standard for establishing and maintaining a rejection under 35 U.S.C. § 103(a) is set forth in M.P.E.P. § 706.02(j), which provides:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both

be found in the prior art, and not based on applicant's disclosure.
In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Kasai

Claims 14-24, 26-37, 39 and 40 stand rejected under 35 U.S.C. § 103(a) for reciting subject matter which the Examiner asserts is unpatentable over that taught in U.S. Patent 5,750,421 to Kasai et al. (hereinafter "Kasai").

Applicants respectfully assert that none of claims 14-24, 26-37, 39, or 40 is obvious in view of Kasai because Kasai does not teach or suggest each and every element of any of claims 14-24, 26-37, 39, or 40.

Regarding independent claim 15, Applicants respectfully assert that Kasai does not teach or suggest "concurrently patterning conductive lines and a support structure of the mold gate from the same conductive film . . .," as recited in independent claim 15.

Kasai teaches a semiconductor device that includes a tape carrier package. Kasai, column 11, lines 41-41; FIGS. 14A and 14B. The semiconductor device includes a polyimide tape carrier 91 having conductive leads 93 bonded to the tape carrier 91. Id., column 11, lines 42-46. An end of each lead 93 is connected to a chip 4. Id., column 11, lines 57-59. Kasai teaches that the leads 93 can be bonded on the tape carrier 91 by adhesive agent 94, or the leads 93 can be formed on the tape carrier 91 using techniques such as vapor deposition and etching. Id., column 12, lines 1-4.

The tape carrier package also includes an upper resin 7a and a lower resin 7b, which are not shown in FIGS. 14A and 14B. Kasai, column 11, lines 59-61. Kasai teaches with reference to FIG. 30 that "[f]irst holes 112 are provided along each side of the opening 111, so as to enable upward and downward flow of the resin at the time of the molding. Id., column 17, lines 55-57. With reference to FIG. 31A, Kasai teaches that "a communication hole 118a is formed in the tape carrier 91, and the molding is carried out by supplying the resin from the runner 117 to an upper gate 116a of the upper metal die 114a via the communication hole 118a." Id., column 18, lines 1-5. With reference to FIG. 31B, Kasai teaches "a communication hole 118b [that] is formed at a part of the tape carrier 91 located within the cavity 115, and the molding is carried out by supplying the resin within the cavity 115." Id., column 18, lines 7-10.

Considering the above teachings disclosed by Kasai, Kasai does not teach or suggest a support structure of a mold gate. As asserted by the Examiner at page 4 of the outstanding Office Action, Kasai teaches conductive lines, “at least some of which function as a support structure of the mold gate.” Although the conductive lines extend across an opening through a structure, and encapsulant may pass through the opening, Kasai does not teach or suggest that the conductive lines are part of the opening, or, for the sake of argument, of the mold gate.

For the reasons set forth above, Applicants assert that independent claim 15 is not obvious considering the teachings of Kasai and respectfully request that the Examiner withdraw the rejection of independent claim 15 under 35 U.S.C. § 103(a).

Regarding dependent claims 16-24, the nonobviousness of independent claim 15 precludes a rejection of claims 16-24, which depend therefrom, because a dependent claim can be obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also MPEP* § 2143.03. Therefore, Applicants request that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to claims 16-24, in addition to the rejection to independent claim 15.

Regarding dependent claim 17, Applicants additionally assert that Kasai does not teach or suggest securing a conductive film to a flexible dielectric film before forming an aperture of the mold gate in the flexible dielectric film, as recited in dependent claim 17. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 17 does not render the invention of claim 17 obvious unless Kasai suggests the desirability of the invention of claim 17. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); *MPEP* § 2143.01. Therefore, Applicants respectfully assert that dependent claim 17 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 17 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 18, Applicants additionally assert that Kasai does not teach or suggest etching a flexible dielectric film of a tape substrate, as recited in dependent claim 18. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 18 does not render the invention of claim 18 obvious unless Kasai suggests the desirability of the invention of claim 18. *See In re Mills*, 916 F.2d 680, 16 USPQ2d

1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 18 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 18 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 19, Applicants additionally assert that Kasai does not teach or suggest wet or dry etching a flexible dielectric film of a tape substrate, as recited in dependent claim 19. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 19 does not render the invention of claim 19 obvious unless Kasai suggests the desirability of the invention of claim 19. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 19 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 19 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 20, Applicants additionally assert that Kasai does not teach or suggest securing a conductive film to a flexible dielectric film after forming an aperture of the mold gate in the flexible dielectric film, as recited in dependent claim 20. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 20 does not render the invention of claim 20 obvious unless Kasai suggests the desirability of the invention of claim 20. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 20 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 20 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 21, Applicants additionally assert that Kasai does not teach or suggest forming an aperture of a mold gate in a flexible dielectric film by mechanically removing material of the flexible dielectric film, as recited in dependent claim 21. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 21 does not render the invention of claim 21 obvious unless Kasai suggests the desirability of the invention of claim 21. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 21 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 21 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 22, Applicants additionally assert that Kasai does not teach or suggest forming an aperture of a mold gate in a flexible dielectric film by die cutting the flexible dielectric film, as recited in dependent claim 22. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 22 does not render the invention of claim 22 obvious unless Kasai suggests the desirability of the invention of claim 22. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 22 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 22 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 23, Applicants additionally assert that Kasai does not teach or suggest concurrently patterning conductive lines and a support structure that is electrically isolated from the conductive lines by forming a mask over a conductive film and removing material of the film through apertures of the mask, as recited in dependent claim 23. Kasai does teach that conductive leads may be formed on a tape carrier “using techniques such as vapor deposition and etching.” *Kasai*, column 12, lines 2-4. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 23 does not render the invention of claim 23 obvious unless Kasai suggests the desirability of the invention of claim 23. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 23 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 23 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 24, Applicants additionally assert that Kasai does not teach or suggest concurrently patterning conductive lines and a support structure that is electrically isolated from the conductive lines by forming a mask over a conductive film and etching material of the film through apertures of the mask, as recited in dependent claim 24. As previously discussed, Kasai does teach that conductive leads may be formed on a tape carrier “using techniques such as vapor deposition and etching.” *Kasai*, column 12, lines 2-4. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 24 does not render the invention of claim 24 obvious unless Kasai suggests

the desirability of the invention of claim 24. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 24 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 24 under 35 U.S.C. § 103(a) for this additional reason.

Regarding independent claim 26, Applicants respectfully assert that Kasai does not teach or suggest “concurrently patterning conductive lines and a support structure of the mold gate from the same conductive film . . .,” as recited in independent claim 26.

As previously discussed, Kasai does not teach or suggest a support structure of the mold gate includes a support structure. Rather, the teachings of Kasai are limited to a polymeric film that includes an opening, which the Office considers to be a mold gate, and which carries separate conductive lines that merely extend across the opening. The conductive lines of Kasai are not part of a mold gate, as would be required to render independent claim 26 obvious.

Therefore, Applicants assert that independent claim 26 is not obvious considering the teachings of Kasai for substantially the same reasons previously discussed in relation to independent claim 15, and respectfully request that the Examiner withdraw the rejection of independent claim 26 under 35 U.S.C. § 103(a).

Regarding dependent claims 27-37 and 39-40, the nonobviousness of independent claim 26 precludes a rejection of claims 27-37 and 39-40, which depend therefrom, because a dependent claim can be obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also MPEP* § 2143.03. Therefore, Applicants request that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to claims 27-37 and 39-40, in addition to the rejection to independent claim 26.

Regarding dependent claim 27, Applicants additionally assert that Kasai does not teach or suggest providing a flexible dielectric film with a single conductive film prelaminated onto a surface of the film, as recited in dependent claim 27. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 27 does not render the invention of claim 27 obvious unless Kasai suggests the desirability of the invention of claim 27. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01.

Therefore, Applicants respectfully assert that dependent claim 27 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 27 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 29, Applicants additionally assert that Kasai does not teach or suggest laminating a single conductive film onto a surface of a flexible dielectric film, as recited in dependent claim 29. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 29 does not render the invention of claim 29 obvious unless Kasai suggests the desirability of the invention of claim 29. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 29 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 29 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 30, Applicants additionally assert that Kasai does not teach or suggest laminating a single conductive film onto a surface of a flexible dielectric film after forming an aperture of a mold gate in the film, as recited in dependent claim 30. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 30 does not render the invention of claim 30 obvious unless Kasai suggests the desirability of the invention of claim 30. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 30 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 30 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claims 31 and 33, Applicants additionally assert that Kasai does not teach or suggest mechanically forming an aperture of a mold gate in a flexible dielectric film, as recited in dependent claims 31 and 33. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claims 31 and 33 does not render the invention of claims 31 and 33 obvious unless Kasai suggests the desirability of the invention of claims 31 and 33. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claims 31 and 33 are

not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claims 31 and 33 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claims 32 and 34, Applicants additionally assert that Kasai does not teach or suggest die cutting a flexible dielectric film to form an aperture of a mold gate in the film, as recited in dependent claims 32 and 34. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claims 32 and 34 does not render the invention of claims 32 and 34 obvious unless Kasai suggests the desirability of the invention of claims 32 and 34. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claims 32 and 34 are not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claims 32 and 34 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 35, Applicants additionally assert that Kasai does not teach or suggest by forming an aperture of a mold gate in a flexible dielectric film by forming a mask on a surface of the film and removing material of the film through apertures of the mask, as recited in dependent claim 35. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 35 does not render the invention of claim 35 obvious unless Kasai suggests the desirability of the invention of claim 35. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 35 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 35 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claims 36 and 37, Applicants additionally assert that Kasai does not teach or suggest by forming an aperture of a mold gate in a flexible dielectric film by forming a mask on a surface of the film and etching material of the film through apertures of the mask, as recited in dependent claims 36 and 37. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claims 36 and 37 does not render the invention of claims 36 and 37 obvious unless Kasai suggests the desirability of the invention of claims 36 and 37. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claims 36 and 37 are

not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claims 36 and 37 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 39, Applicants additionally assert that Kasai does not teach or suggest concurrently patterning conductive lines and a support structure that is electrically isolated from the conductive lines by forming a mask over a conductive film and removing material of the film through apertures of the mask, as recited in dependent claim 39. Kasai does teach that conductive leads may be formed on a tape carrier “using techniques such as vapor deposition and etching.” Kasai, column 12, lines 2-4. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 39 does not render the invention of claim 39 obvious unless Kasai suggests the desirability of the invention of claim 39. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 39 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 39 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 40, Applicants additionally assert that Kasai does not teach or suggest concurrently patterning conductive lines and a support structure that is electrically isolated from the conductive lines by forming a mask over a conductive film and etching material of the film through apertures of the mask, as recited in dependent claim 40. As previously discussed, Kasai does teach that conductive leads may be formed on a tape carrier “using techniques such as vapor deposition and etching.” Kasai, column 12, lines 2-4. Applicants respectfully assert that the mere fact that the teachings of Kasai could be modified to provide the invention of claim 40 does not render the invention of claim 40 obvious unless Kasai suggests the desirability of the invention of claim 40. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 40 is not obvious considering Kasai, and request that the Examiner withdraw the rejection of dependent claim 40 under 35 U.S.C. § 103(a) for this additional reason.

Tsubosaki in View of Ueda

Claims 15-42 stand rejected under 35 U.S.C. § 103(a) for reciting subject matter which the Examiner asserts to be unpatentable over that taught in U.S. Patent Application Publication 2002/0180010 to Tsubosaki et al. (hereinafter “Tsubosaki”), in view of teachings from U.S. Patent 5,196,917 to Ueda et al. (hereinafter “Ueda”).

Applicants respectfully assert that none of claims 15-42 are obvious considering the teachings of Tsubosaki in view of the teachings of Ueda because Tsubosaki and Ueda do not teach or suggest all the claim limitations of any one of claims 15-42.

Regarding independent claim 15, Applicants respectfully assert that the cited prior art references do not expressly or inherently teach or suggest “forming an aperture of a mold gate in [a] flexible dielectric film...; and concurrently patterning conductive lines and a support structure of the mold gate from the same conductive film, the support structure...**at least partially overlapping the aperture,**” as recited in independent claim 15 as currently amended.

Tsubosaki teaches a semiconductor device having a tape carrier package structure that includes a chip 2 disposed within a device hole of the tape carrier 1. Tsubosaki, page 4, paragraph [0062]. The tape carrier 1 has a tape base member 1a and a plurality of leads 1c bonded by adhesive 1b to one surface of the base. Id., page 4, paragraph [0063]. Tsubosaki also teaches a passage or inlet port 1a2 in the tape base 1a that is used for injecting resin. Id., page 4, paragraph [0065]. The resin injection port 1a2 functions as part of a gate 5a of a metal molding-die tool 5 during resin sealing processes. Id.

Tsubosaki further teaches that a gold electroplated copper thin film layer 1a3 is formed on the tape carrier 1 at a portion at which the seal resin makes contact during resin sealing processes in close proximity to the seal resin injection port 1a2. Tsubosaki, page 4, paragraph [0066]. The copper thin-film layer 1a3 is formed by patterning of a copper thin film used for fabrication of the leads 1c simultaneously during formation of the leads 1c. Id. Furthermore, the copper thin-film layer 1a3 is formed at a specified location facing a sub-runner 5c of the molding die 5 when the tape carrier 1 is disposed in the molding die 5. Id.

Tsubosaki does not, however, teach or suggest a support structure of a mold gate that at least partially overlaps an aperture of a mold gate in a flexible dielectric film, as recited in independent claim 15 as currently amended.

Ueda teaches a carrier tape having an insulating film formed of polyimide. Ueda, column 3, lines 51-52. The carrier tape includes an opening 15 formed in a link portion 14 that “extends across a mold line 16 indicating the boundary of an area which becomes sealed with a resin during a molding process.” Id., column 4, lines 4-7. During a resin molding process, “the opening 15...serves as a passage through which molten resin flows.” Id., column 4, lines 8-10.

Ueda does not, however, teach or suggest a support structure of a mold gate that at least partially overlaps an aperture of a mold gate in a flexible dielectric film, as recited in independent claim 15 as currently amended.

As taught at paragraph [0032] of the as-filed specification for the present invention, the support element is positioned so as to cover at least a portion of the aperture and forms a base of the mold gate.

For the reasons set forth above, Applicants assert that independent claim 15 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and respectfully request that the Examiner withdraw the rejection of independent claim 15 under 35 U.S.C. § 103(a).

Regarding dependent claims 16-25, the nonobviousness of independent claim 15 precludes a rejection of claims 16-25, which depend therefrom, because a dependent claim can be obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also MPEP* § 2143.03. Therefore, Applicants request that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to claims 16-25, in addition to the rejection to independent claim 15.

Regarding dependent claim 16, Applicants additionally assert that the cited prior art references to not teach or suggest securing a conductive film from which conductive lines and a support structure are patterned to a flexible dielectric film, as recited in dependent claim 40. Tsubosaki teaches that a plurality of leads are bonded by adhesive to one surface of the tape base. Tsubosaki, page 4, paragraph [0063]. Tsubosaki further teaches that a copper thin film layer is

formed at a portion of the tape carrier, and that the copper thin film layer is formed by patterning of a copper thin film used for fabrication of the leads simultaneously during formation of the leads. Id., page 4, paragraph [0066]. Applicants respectfully assert that neither Tsubosaki nor Ueda, however, teach or suggest securing a conductive film from which conductive lines and a support structure are patterned to a flexible dielectric film. Therefore, Applicants respectfully assert that dependent claim 16 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 16 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 17, Applicants additionally assert that the cited prior art references to not teach or suggest securing a conductive film from which conductive lines and a support structure are patterned to a flexible dielectric film prior to forming an aperture of a mold gate in the film, as recited in dependent claim 17. Applicants respectfully assert that the mere fact that the teachings of the prior art references could be modified to provide the invention of claim 17 does not render the invention of claim 17 obvious unless the references suggest the desirability of the invention of claim 17. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 17 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 17 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 18, Applicants additionally assert that the cited prior art references to not teach or suggest etching a flexible dielectric film to form an aperture of a mold gate in the film, as recited in dependent claim 18. Applicants respectfully assert that the mere fact that the teachings of the prior art references could be modified to provide the invention of claim 18 does not render the invention of claim 18 obvious unless the references suggest the desirability of the invention of claim 18. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 18 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 18 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 19, Applicants additionally assert that the cited prior art references to not teach or suggest wet etching or dry etching a flexible dielectric film to form an aperture of a mold gate in the film, as recited in dependent claim 19. Applicants respectfully assert that the mere fact that the teachings of the prior art references could be modified to provide the invention of claim 19 does not render the invention of claim 19 obvious unless the references suggest the desirability of the invention of claim 19. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 19 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 19 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 20, Applicants additionally assert that the cited prior art references to not teach or suggest securing a conductive film from which conductive lines and a support structure are patterned to a flexible dielectric film after forming an aperture of a mold gate in the film, as recited in dependent claim 20. Applicants respectfully assert that the mere fact that the teachings of the prior art references could be modified to provide the invention of claim 20 does not render the invention of claim 20 obvious unless the references suggest the desirability of the invention of claim 20. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 20 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 20 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 21, Applicants additionally assert that the cited prior art references to not teach or suggest securing a conductive film from which conductive lines and a support structure are patterned to a flexible dielectric film after mechanically removing material of the film to form an aperture of a mold gate in the film, as recited in dependent claim 21. Applicants respectfully assert that the mere fact that the teachings of the prior art references could be modified to provide the invention of claim 21 does not render the invention of claim 21 obvious unless the references suggest the desirability of the invention of claim 21. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore,

Applicants respectfully assert that dependent claim 21 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 21 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 22, Applicants additionally assert that the cited prior art references to not teach or suggest securing a conductive film from which conductive lines and a support structure are patterned to a flexible dielectric film after die cutting the film to form an aperture of a mold gate in the film, as recited in dependent claim 22. Applicants respectfully assert that the mere fact that the teachings of the prior art references could be modified to provide the invention of claim 22 does not render the invention of claim 22 obvious unless the references suggest the desirability of the invention of claim 22. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 22 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 22 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 23, Applicants additionally assert that the cited prior art references to not teach or suggest forming a mask over a conductive film and removing material of the film through apertures of the mask, as recited in dependent claim 23. Applicants respectfully assert that the mere fact that the teachings of the prior art references could be modified to provide the invention of claim 23 does not render the invention of claim 23 obvious unless the references suggest the desirability of the invention of claim 23. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 23 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 23 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 24, Applicants additionally assert that the cited prior art references to not teach or suggest forming a mask over a conductive film and etching the film through apertures of the mask, as recited in dependent claim 24. Applicants respectfully assert that the mere fact that the teachings of the prior art references could be modified to provide the invention of claim 24 does not render the invention of claim 24 obvious unless the references

suggest the desirability of the invention of claim 24. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 24 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 24 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 25, Applicants additionally assert that the cited prior art references do not teach or suggest coating **sidewalls** of an aperture of a mold gate in a flexible dielectric film with a material that reduces or prevents adhesion of a packaging material to the mold gate, as recited in dependent claim 25. Tsubosaki teaches forming a plated copper thin film layer 1a3 coating at a specified location facing a sub-runner 5c of the molding die 5 when the tape carrier 1 is disposed in the molding die 5 to “reduce the adhesivity between residual resin at the subrunner 5c and the tape carrier 1....” Tsubosaki, page 4, paragraphs [0066]-[0067]. As clearly seen in FIG. 3 of Tsubosaki, however, the plated copper thin film layer 1a3 is disposed on a major surface of the tape carrier 1 and **is not disposed on sidewalls** of an aperture of a mold gate. Therefore, Applicants respectfully assert that dependent claim 25 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 25 under 35 U.S.C. § 103(a) for this additional reason.

Regarding independent claim 26, Applicants respectfully assert that the cited prior art references do not expressly or inherently teach or suggest “forming an aperture of a mold gate in [a] flexible dielectric film...; and concurrently patterning conductive lines and a support structure of the mold gate from the same conductive film, the support structure...**at least partially overlapping the aperture**,” as recited in independent claim 26 as currently amended.

As previously discussed, the teachings of Tsubosaki and Ueda do not teach or suggest a support structure of the mold gate that at least partially overlaps an aperture of a mold gate in a flexible dielectric film, as recited in independent claims 15 and 26.

Therefore, Applicants assert that independent claim 26 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda for substantially the same reasons

previously discussed in relation to independent claim 15, and respectfully request that the Examiner withdraw the rejection of independent claim 26 under 35 U.S.C. § 103(a).

Regarding dependent claims 27-42 the nonobviousness of independent claim 26 precludes a rejection of claims 27-42, which depend therefrom, because a dependent claim can be obvious only if the independent claim from which it depends is obvious. *See In re Fine*, 5 U.S.P.Q.2d 1596, 1600 (Fed. Cir. 1988), *see also MPEP* § 2143.03. Therefore, Applicants request that the Examiner withdraw the 35 U.S.C. § 103(a) obviousness rejection to claims 27-42, in addition to the rejection to independent claim 26.

Regarding dependent claim 27, Applicants additionally assert that the cited prior art references do not teach or suggest providing a flexible dielectric film with a single conductive film prelaminated onto a surface of the film, as recited in dependent claim 27. Applicants respectfully assert that the mere fact that the teachings of the prior art references could be modified to provide the invention of claim 27 does not render the invention of claim 27 obvious unless the references suggest the desirability of the invention of claim 27. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); *MPEP* § 2143.01. Therefore, Applicants respectfully assert that dependent claim 27 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 27 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 29, Applicants additionally assert that the cited prior art references do not teach or suggest laminating a single conductive film onto a surface of a flexible dielectric film, as recited in dependent claim 29. Applicants respectfully assert that the mere fact that the teachings of the cited prior art references could be modified to provide the invention of claim 29 does not render the invention of claim 29 obvious unless the references suggest the desirability of the invention of claim 29. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); *MPEP* § 2143.01. Therefore, Applicants respectfully assert that dependent claim 29 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 29 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 30, Applicants additionally assert that the cited prior art references do not teach or suggest laminating a single conductive film onto a surface of a flexible dielectric film after forming an aperture of a mold gate in the film, as recited in dependent claim 30. Applicants respectfully assert that the mere fact that the teachings of the cited prior art references could be modified to provide the invention of claim 30 does not render the invention of claim 30 obvious unless the references suggest the desirability of the invention of claim 30. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 30 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 30 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claims 31 and 33, Applicants additionally assert that the cited prior art references do not teach or suggest mechanically forming an aperture of a mold gate in a flexible dielectric film, as recited in dependent claims 31 and 33. Applicants respectfully assert that the mere fact that the teachings of the cited prior art references could be modified to provide the invention of claims 31 and 33 does not render the invention of claims 31 and 33 obvious unless the references suggest the desirability of the invention of claims 31 and 33. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claims 31 and 33 are not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claims 31 and 33 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claims 32 and 34, Applicants additionally assert that the cited prior art references do not teach or suggest die cutting a flexible dielectric film to form an aperture of a mold gate in the film, as recited in dependent claims 32 and 34. Applicants respectfully assert that the mere fact that the teachings of the cited prior art references could be modified to provide the invention of claims 32 and 34 does not render the invention of claims 32 and 34 obvious unless the references suggest the desirability of the invention of claims 32 and 34. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claims 32 and 34 are not obvious considering the

teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claims 32 and 34 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 35, Applicants additionally assert that the cited prior art references do not teach or suggest forming an aperture of a mold gate in a flexible dielectric film by forming a mask on a surface of the film and removing material of the film through apertures of the mask, as recited in dependent claim 35. Applicants respectfully assert that the mere fact that the teachings of the cited prior art references could be modified to provide the invention of claim 35 does not render the invention of claim 35 obvious unless the references suggest the desirability of the invention of claim 35. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 35 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 35 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claims 36 and 37, Applicants additionally assert that the cited prior art references do not teach or suggest forming an aperture of a mold gate in a flexible dielectric film by forming a mask on a surface of the film and etching material of the film through apertures of the mask, as recited in dependent claims 36 and 37. Applicants respectfully assert that the mere fact that the teachings of the cited prior art references could be modified to provide the invention of claims 36 and 37 does not render the invention of claims 36 and 37 obvious unless the references suggest the desirability of the invention of claims 36 and 37. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claims 36 and 37 are not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claims 36 and 37 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 39, Applicants additionally assert that the cited prior art references do not teach or suggest concurrently patterning conductive lines and a support structure that is electrically isolated from the conductive lines by forming a mask over a conductive film and removing material of the film through apertures of the mask, as recited in dependent claim 39. Tsubosaki teaches that copper may be adhered to one surface of the tape

using an adhesive and, thereafter, patterning the copper thin film by etching techniques.

Tsubosaki, page 6, paragraph [0079]. Tsubosaki does not teach the use of a mask. Applicants respectfully assert that the mere fact that the teachings of the cited prior art references could be modified to provide the invention of claim 39 does not render the invention of claim 39 obvious unless the references suggest the desirability of the invention of claim 39. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 39 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 39 under 35 U.S.C. § 103(a) for this additional reason.

Regarding dependent claim 40, Applicants additionally assert that the cited prior art references do not teach or suggest concurrently patterning conductive lines and a support structure that is electrically isolated from the conductive lines by forming a mask over a conductive film and etching material of the film through apertures of the mask, as recited in dependent claim 40. As previously discussed, Tsubosaki teaches that copper may be adhered to one surface of the tape using an adhesive and, thereafter, patterning the copper thin film by etching techniques. Tsubosaki, page 6, paragraph [0079]. Tsubosaki does not teach the use of a mask. Applicants respectfully assert that the mere fact that the teachings of the cited prior art references could be modified to provide the invention of claim 40 does not render the invention of claim 40 obvious unless the references suggest the desirability of the invention of claim 40. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); MPEP § 2143.01. Therefore, Applicants respectfully assert that dependent claim 40 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 40 under 35 U.S.C. § 103(a) for this additional reason.

Regarding claim 41, Applicants additionally assert that the cited prior art references to not teach or suggest coating **sidewalls** of an aperture of a mold gate in a flexible dielectric film with a material that reduces or prevents adhesion of a packaging material to the mold gate, as recited in dependent claim 41. Tsubosaki teaches forming a plated copper thin film layer 1a3 coating at a specified location facing a sub-runner 5c of the molding die 5 when the tape carrier 1 is disposed in the molding die 5 to “reduce the adhesivity between residual resin at the

subrunner 5c and the tape carrier 1...." Tsubosaki, page 4, paragraphs [0066]-[0067]. As clearly seen in FIG. 3 of Tsubosaki, however, the plated copper thin film layer 1a3 is disposed on a major surface of the tape carrier 1 and is **not disposed on sidewalls** of an aperture of a mold gate. Therefore, Applicants respectfully assert that dependent claim 41 is not obvious considering the teachings of Tsubosaki in view of the teachings of Ueda, and request that the Examiner withdraw the rejection of dependent claim 41 under 35 U.S.C. § 103(a) for this additional reason.

CONCLUSION

It is respectfully submitted that each of claims 15 through 42 is allowable. An early notice of the allowability of each of these claims is respectfully solicited, as is an indication that the above-referenced application has been passed for issuance. If any issues preventing allowance of the above-referenced application remain which might be resolved by way of a telephone conference, the Office is kindly invited to contact the undersigned attorney.

Respectfully submitted,



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Date: October 31, 2005

Attachment: Replacement Sheet
Annotated Sheet Showing Changes

BGP/djp:eg
Document in ProLaw

Serial No. 10/788,990

Amendments to the Drawings:

The attached sheet of drawings includes changes to FIGS. 1A and 1B.

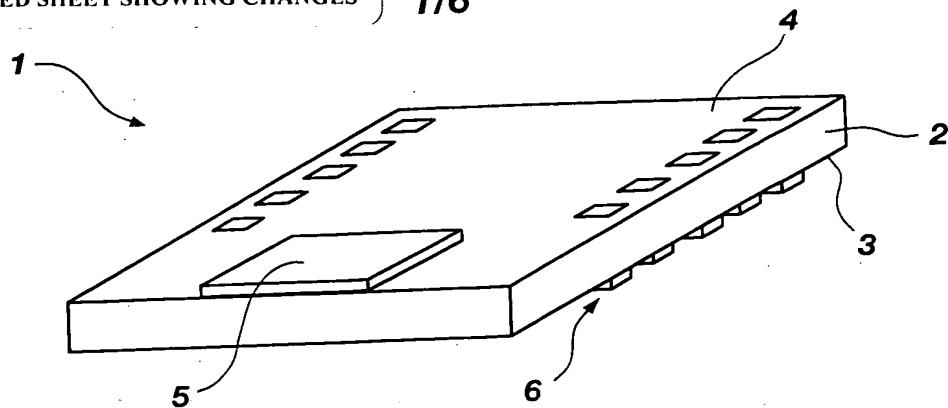


FIG. 1A
(PRIOR ART)

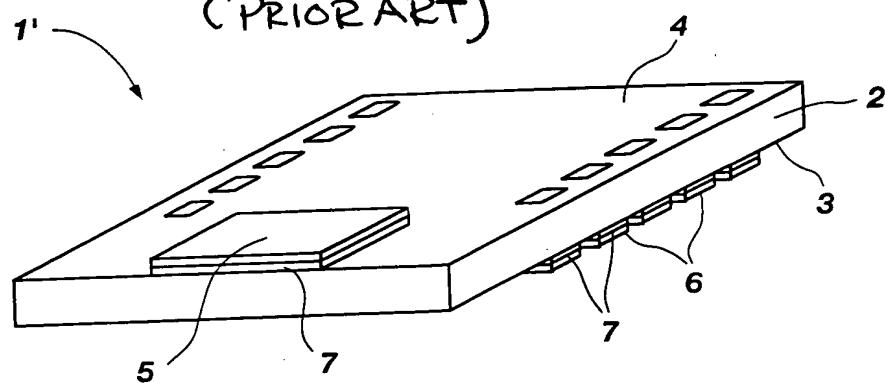


FIG. 1B
(PRIOR ART)

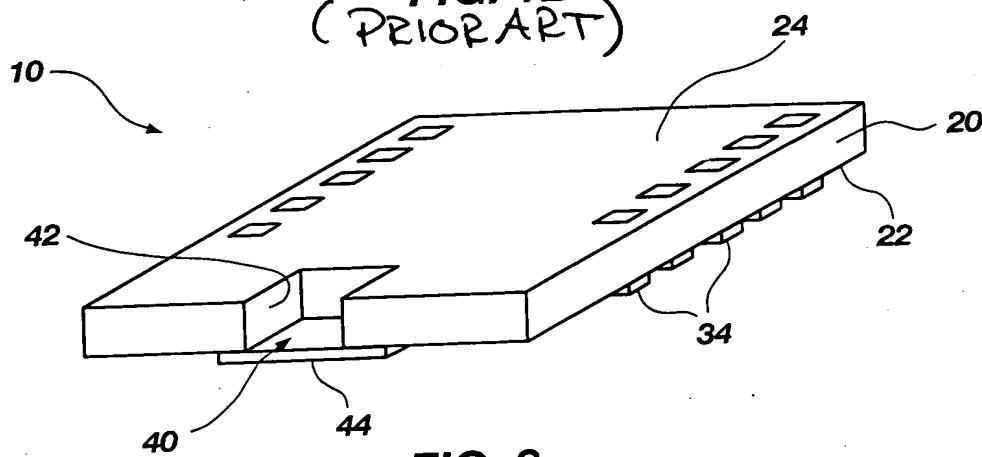


FIG. 2

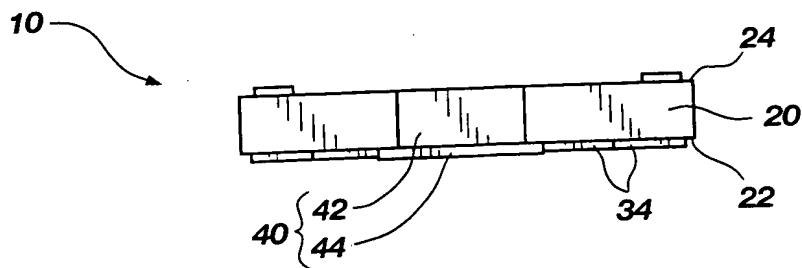


FIG. 3